Testing Services

The preferred expert source for individual survivability technology, products, information, and systems.

ISO 9000 Certified

U.S. Army Soldier Systems Center
Natick Soldier Center
Natick, MA 01760-5000

INDIVIDUAL PROTECTION DIRECTORATE

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A) Introduction

Welcome to the Individual Protection Directorate, Natick Soldier Center -Testing Services. As a subordinate organization the U.S. Army Materiel Command, we have numerous testing capabilities that can enhance your company's success.

Thanks to the passing of law 10 U.S.C. § 2539b, we can offer our testing services to private industry. Being a Government RD&E Center, we are not allowed, by this law, to make a profit on our testing services. Therefore, we can pass the benefit of low cost on to you. This will allow you to come in under your budget costs saving you money and time.

We are a U.S. Army Research, Development & Engineering Installation (RD&E) with a varied mission and product line. As a result of our being a premiere government facility we support the entire Department of Defense community as well as Federal, State and Local government agencies. Our testing facility and Services are located at the Natick Soldier Systems Center in Natick, Massachusetts—only 20 miles west of Boston.

How can we help your business grow?

We offer:

- Low-cost services
- Unique testing facilities
- Highly rated and experienced staff
- State-of-the-art equipment
- Test plan development, data analysis and report preparation

Why use Natick's Testing Services?

We have provided testing for the U.S. Armed Forces for over 45 years. This experience reflects the type of quality service and reliability that you can rely on, to evaluate your product. Our Textile Testing Facility is **ISO 9000 Certified**. This certification confirms that we are a premiere testing facility in the textile industry.

We're inexpensive—our equipment, facilities and staff are already in place, minimizing your out-of-pocket expenses for specialized testing.

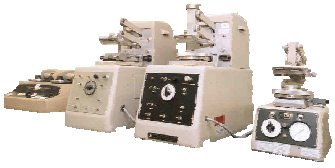
You can be confident with the results you receive from our testing professionals. We have been conducting tests on textiles, clothing and equipment of various types for years for our military. We know from experience the value of obtaining reliable data, with the welfare of America's sons and daughter serving in our Armed Forces depending on our data. That same care goes into all testing procedures regardless of whom it may be for.

Developing a working relationship based on dependable service is an effective way to avoid a crisis. We can offer you the testing experience and skills you need to complete a special project or meet an important deadline.

Give us a call at (508) 233-5192 or get in touch with us at our web site (http://www.natick.army.mil/), so that we can work together to keep your business running smoothly without delays.

B) Textile Testing Equipment

1. Abrasion Resistance Testers



There are several abrasion resistance testers that determine the abrasion resistance of woven and knitted fabrics. The Inflated Diaphragm (Stoll) Tester inflates the specimen over a rubber diaphragm under controlled air pressure and subjects it to either unidirectional or multidirectional rubbing action. The Taber Abrasion Tester subjects the specimen to rotary rubbing action under controlled conditions or pressure and abrasive action. The Flexing, Folding Bar (Stoll) Method subjects the specimen to unidirectional reciprocal folding and rubbing over a given bar under controlled conditions of pressure and tension. And the Wyzenbeek Abrasion Tester subjects the specimen to unidirectional rubbing action under controlled conditions of pressure, tension, and abrasive action.

2. Air Permeability Tester

Used for fast, simple, and accurate determinations of the air permeability of all kinds of flat materials ranging from dense airbag fabrics and paper to extremely open, non-woven and forming fabrics.

3. Camouflage Analysis and Demonstration Facility

Provides the ability to evaluate current and experimental camouflage patterns year round against simulated woodland, desert, urban and arctic backgrounds. Live plants in the desert and woodland scenes add realism for in-house measurements.

The facility is equipped with specialized lighting to allow for simulation of daylight, as well as varying degrees of moonlit night skies for evaluation against night vision devices.

4. Dynamic Absorption Tester

This test method is applicable to any textile fabric, which may or may not have been given a water-resistant or water-repellent finish. It measures the resistance of fabrics to wetting by water. It is particularly suitable for measuring the water-repellent efficacy of finishes applied to fabrics, because it subjects the treated fabrics to dynamic conditions similar to those often encountered during actual use. It is not intended for use in predicting the probable rain penetration resistance of fabrics, since it measures absorption of water into, but not through, the fabric.

5. Dynamic Modulus

The Dynamic Modulus measures the sonic velocity of the materials, such as yarns, fabrics, and composites. Manufactured by H. M. Morgan Co. the modulus measures the travel time of constant frequency of 5KHz in known distance.

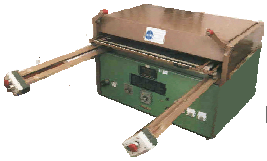
6. **Electrostatic Decay Meter**

Model 406C manufactured by Electro-Tech Systems Inc. reads the decay time of induced charges on fabric surfaces in a temperature and humidity controlled chamber to determine if it is safe to wear in an electrostatic environment.

7. **Fade-Ometer and Atlas Carbon Arc Fade-Ometer**

Used to determine the colorfastness to light (Xenon and Carbon Arc) of textile materials. These machines meet test conditions specified by American Association of Textile Chemists and Colorists.

8. **Flat Head Fusing Press**



The fusing press has temp range up to 350 degree F to perform lamination processes for all fusible clothing applications, producing cooling panels with triple layer lamination with tubing in middle of cotton T-shirt materials, and ballistic panel fabrication. Press size is 24" X 32".

9. **Flexural Rigidity Tester**

Determines the stiffness (bending length) and flex (flexural rigidity) of cloth by employing the principle of cantilever bending of the cloth under its own weight. It is applicable where cloth is to be tested at extreme temperatures as well as under standard conditions.

10. **Laundering**

i. **Colorfastness to Laundering, Home and Commercial: Accelerated**

These accelerated laundering tests are to evaluate the colorfastness to laundering of textiles, which are expected to withstand frequent laundering. The fabric color loss and surface changes resulting from detergent solution and abrasive action of five typical hand, home or commercial launderings, with or without chlorine are roughly approximated by one 45-minute test. However, the staining effect produced by five typical hand, home or commercial launderings cannot always be predicted by the 45 min test. Staining is a function of the ratio of colored to undyed fabrics, fiber content of fabrics in the wash load and other end-use conditions which are to always predictable.

ii. **Dimension Changes in Commercial Laundering of Woven and Knitted Fabrics Except Wool**

This test method is used to determine the dimensional changes in woven and knitted fabrics made of fibers other than wool when subjected to laundering procedures commonly used in a commercial laundry. A range of laundering test procedures from severe to mild is provided to allow simulation of the various types of commercial launderings available. Five drying test procedures are established to cover the drying techniques used. These tests are not accelerated and must be repeated to determine dimensional changes after multiple launderings.

iii. **Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics**
This test method is intended for the determination of dimensional changes in woven and knit fabrics when subjected to repeated automatic laundering procedures commonly used in the home.

iv. **Field Laundry Machine with Programmable Formulas**
The M85 Series Mobile field laundry unit has a 60 pound capacity. Water level, length of time, and temperature for each operation are shown with each formula. Formulas are listed in FM 42-414

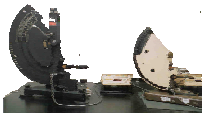
11. Scorch Tester

This test method is intended for assessing the resistance of color of textiles of all kinds and in all forms to the action of dry heat, excluding pressing.

12. Spray Tester

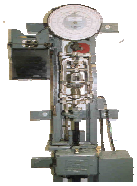
This test method is applicable to any textile fabric, which may or may not have been given a water-repellent finish. It measures the resistance of fabrics to wetting by water. It is especially suitable for measuring the water-repellent efficacy of finishes applied to fabrics. It is not intended, however, for use in predicting the probable rain penetration resistance of fabrics, since it does not measure penetration of water through the fabric.

13. Tearing Resistance Tester



Determines the force required to propagate a single-rip tear starting from a cut in a fabric and using a falling pendulum type apparatus.

14. Tensile Tester



Determines the breaking strength and elongation of most textile materials, including woven and non-woven fabrics, coated cloths, webbings, rope and cordage.

15. Thermal Barrier Testing Apparatus

This apparatus tests the performance of thermal (flame) protective clothing using infrared heat that is transferred through the fabric to a skin-simulating sensor. This simple bench scale apparatus can quickly and economically provide burn data comparable with the full-scale PyroMan test.
It can calculate a burn injury assessment; not only the percentage of burn injury using an exposure to thermistor voltage correlation, but also the location of burn injuries using an air gap correlation.

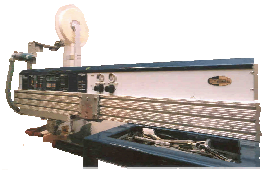
16. **Vertical Flame Test Chamber**

Vertical Flame Test Chamber, HVFAA (Horizontal Vertical FAA) Flame Tester, Thermal Protective Performance (TPP) Tester.

17. **Weather-Ometer**

The Weather-Ometer has the capability of exposing textile materials of all kinds, including coated fabrics and products made thereof, in an artificial weathering apparatus using controlled conditions. The Ci4000 Weather-Ometer meets test conditions specified by American Association of Textile Chemists and Colorists and SAE (automotive industry).

18. **Welding and Seam Tape Machine**



The Seam-Tec machine has the capability to weld urethane and other thermoplastic type materials in any shape for either inflatable or waterproof seam applications. The welding and seam tape machine can seal in circular shapes or with other designs and has option to apply seam tape over seams.

C) Specialized Research Equipment

1. **Accelerated Solvent Extractor**

Model 200 manufactured by Dionex automatically extracts wax, oil, fats, soap and other finishes/treatments from fabrics using high pressure and elevated temperature. It reduces the quantity of solvents used thereby producing less hazardous waste as compared to a Soxhlet extractor. Stripping a piece of fabric of its finishes and/or other treatments is important before it can be further analyzed qualitatively and quantitatively.

2. **Density Gradient Column**

Density measurement of solid materials, such as fibers, plastics, manufactured by Techne, Inc. Various ranges of density are calibrated by known density bids.

3. **Environmental Chamber for Tensile Testing**

The environmental chamber system is designed to provide accurate controlled temperature and humidity conditions for materials testing applications.

Temperature range: -200^{o} to +400^{o} F

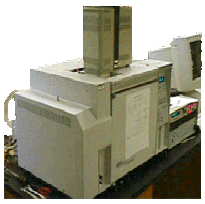
RH 20 95% @ 65^{o} to 194^{o}F

4. Environmental Scanning Electron Microscope (ESEM) and Microanalysis System

The FEI/Philips Environmental Scanning Electron Microscope (ESEM) Model XL30 TMP has a tungsten fiiment gun with a resolution of 3.5 nm at 30 KV in high vacuum mode and in 5 Torr ESEM mode. The system is equipped with a backscattered detector, peltier stage, hot stage and tensile stage. Dry and/or wet samples can be viewed in the microscope. Attached to the ESEM is an Oxford INCA Energy 300 Microanalysis System with Si(Li) 133 ev SATW (Super Atmospheric Thin Window) x-ray detector for detection of Beryllium - Uranium. The x-ray system is capable of identifying elements on the surface of the sample and performing standardless Quantitative analysis.

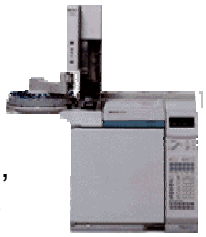
5. Gas Chromatography

i. Pyrolyzer 2000



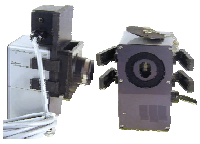
The Pyrolyzer Model 2000, manufactured by CDS, Inc. converts fiber/polymer sample into simpler volatile products. A Pyrogram (graph with peaks) that is an individual fingerprint of a fiber/polymer is produced. Kevlar can be identified apart from nomex, nylon 6 from nylon 66 without any doubt. A Hewlett-Packard computer controls the equipment and collects, manipulates, processes and stores the data.

ii. Hewlett Packard 6890



The HP 6890 Series GC system delivers unprecedented levels of performance, convenience, productivity, and eases regulatory compliance. It has full electronic pneumatics control (EPC) of all gas pressures and flows, in addition to enhanced control and automation. The AC separates Pyrolysis products.

6. Opacity Testing Equipment



Model DR-2 Digital Radiometer, Model 2020-31 Photometric telescope, and Model D46CQ Photo Multiplier Detector manufactured by EG & G Gamma Scientific, tests shelter fabric materials for their opacity to lights of visible (400 to 750 nanometers) and combined visible and non-visible (200 to 930 nanometers) wavelengths. The test is a laboratory simulation of observations made through night-vision devices.

7. Rapid K Heat Flow Meter Thermal Conductivity Instrument

ASTM C1518 Thermal Conductivity by means of the Heat Flow Meter, manufactured by Dynatech, has a 12 X 12 inch sample required K range from 0.1 to 3.0 BTU-in/hr sq ft F (0.015 to 0.43 W/m deg C sample thickness should be greater than 0.5 inches and less than 2 inches. Temperature range 10 F to 400 F (-12 C to 200 C). Samples can be tested compressed or uncompressed.

8. Spectrophotometers

i. MASS Spectrophotometer - HP 5973

The HP 5973 makes it easier then ever before to perform routine qualitative and quantitative analyses, even with complex sample matrices. It offers a new dimension in sensitivity, technical performance, productivity and reliability. This is being used as a detector for the components separated by a gas chromatograph.

ii. Fourier Transform Infrared

Model 1600 manufactured by Perkin-Elmer identifies liquids, solids or smears. It scans a sample from 400 to 4000 cm^{-1} wavelengths. The bands shown on each spectrum relates to the stretching, bending, scissoring or vibration of the molecules at different wavelengths characteristic of the functional groups present in it. For identification, the sample's IR spectrum is either searched on an IR Spectral Library or matched with a standard available.

iii. Spectrophotometer, Color

HunterLab's highest performance diffuse/8º spectrophotometer for color quality control, development and recipe formulation.

- Reflectance (specular included or excluded) and transmittance b measurement capabilities in one instrument.
- 360 - 750 nm wavelength range
- Long-life pulsed xenon light source with dual-beam optics
- Includes both standard (25mm) and small (6mm) area view with fully automated optics and a sample retroviewer screen.
- 420 and 460 nm UV filters provide UV included, UV excluded or UV CAL facilities for accurate measurement of fluorescent samples.
- Ergonomic READ/MACRO button on sensor housing and footswitch Interface.

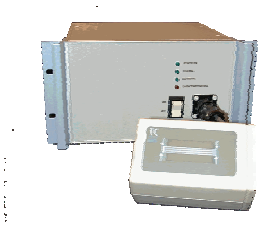
iv. Spectrophotometer, UV/VIS/NIR

The Cary 500 spectrophotometer is a research-grade reference UV-Vis-NIR instrument. It has an extended working range beyond 6 absorbance units, and a wavelength range covering the low UV, 175 nm, up to near infra red (NIR), 3300 nm. The Cary 500 spectrophotometer incorporates a PbS detector which is thermoelectrically cooled to 0 °C to reduce photometric noise.

9. Sweating Guarded Hot Plate

The Sweating Guarded Hot Plate by Holometrics (Dynatech) is housed inside an Envirotronics Environmental Chamber with Temperature and Humidity Control capable of maintaining temperatures of -67 □C to +177□ C □ 0.5 degree and humidity at 10 - 98% □ 3%RH. Test method ISO 11092 "Measurement of Thermal and Water Vapor Resistance under Steady-State Conditions (Sweating Guarded Hot Plate Test)" is routinely used. A 21x21 inch sample is required.

10. Thermal Conductivity Probe



Thermal conductivity and thermal effusivity measurement equipment, manufactured by Mathis Instruments, Inc. The thermal Effusivity is the square root of product of density, thermal conductivity and heat capacity, which are the properties readily affected by thermal as well as physical history. This equipment can be used as an analytical tool in polymer processing, such as, particle or nanotube orientation, thermal conductivity of homogeneous as well as composites, voids, etc. quality control, such as nondestructive measurement of thermal and /or physical damage.

11. Design and Computerized Pattern Equipment

i. Artworks Studio

From product development to merchandising, Artworks Studio is used to create catalogs, package designs, or any number of merchandising projects. Artworks tools build a presentation combining all the elements you've created: photos, sketches, drawings, color ways, and fabrics. In addition, these systems perform repetitive and time-consuming tasks, freeing designers to focus on the creative development process.

ii. Computer Aided Design

The US Army is creating designs and patterns using a "Computer Aided Design" (CAD) system to expedite the fabrication of clothing related prototypes. This approach is unique and much more productive than traditional processes. The increased speed dramatically shortens the product development cycle, which in turn, increases profitability.

iii. Pattern Design Software

Pattern Design helps the patternmaker and grader improve quality, create and grade more patterns in less time. Pattern Design includes functions that enable basic to complex pattern making tasks. The powerful grading tools speed up time consuming tasks associated with creating graded sizes. The wide range of pattern making and grading tools means flexibility for the user.

With the digitizer you can quickly and efficiently input pattern pieces into the Pattern Design system. The digitizer workstation consists of a digitizing table with menu, and a cursor. The digitizer allows you to enter information that describes a pattern piece.

iv Automated Cutter

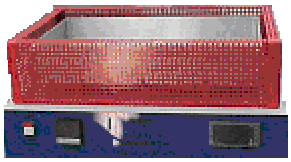
The sample cutter is a compact, plug 'n play, turnkey system. This system produces samples, prototypes, or short production runs with an absolute minimum disruption to the business flow.

E) Footwear Testing Equipment

1. Dynamic Stiffness Tester

Measures the longitudinal stiffness and torsional stiffness of complete footwear. The test specimen is fixed about a defined line and bending moment is recorded as measure of stiffness.

2. Heated Sand Bath



Assesses the heat insulating properties of footwear. The apparatus consists of a metal tray incorporating a hotplate, covered with sand. The footwear item being tested is placed on this tray, with sand up to the featherline. A temperature probe placed inside the footwear is used to determine the temperature rise after a period of time.

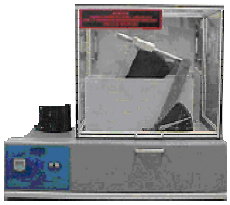
3. Impact Testing System

ASTM 1614-99, standard test method for shock attenuating properties of materials systems for athletic footwear.

4. Pedar Dynamic Pressure Systems

Dynamic pressure distribution measuring system for capacitiative sensors. The Pedar system consists of thin, flexible insoles which are placed inside the patient's shoe, between the bottom of the foot and the shoe. The output is a pressure distribution of the foot during stance. This is a mobile unit for field based data collection.

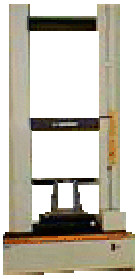
5. Whole Shoe Flexer



Assesses the resistance of an item of footwear to repeated flexing about its natural flexing line. The angle of flexing is adjustable, and the number of flexes can be preset by means of a pre-determining counter. After testing is complete, the footwear is subjectively assessed for signs of damage. One version of this machine has been designed to allow water penetration testing of high leg footwear. A tray is supplied with the machine to enable tests to be carried out. It accommodates one item of footwear for wet or dry testing.

F) Tensile/Compression Evaluation Equipment

1. **Instron 4201 Tensile Testing Machine with Environmental Chamber**



The Instron 4201 has a complete load cell range from 1 to 2,500 gms. and tensile testing of 225 lbs, 450 lbs and 1,000 lbs for general testing of closures, seam structures, fabric and any tensile, compression, cyclic or 3-point flexure test. Software automatically allows for machine to cycle compress or pull any structure at preset load or elongation cycling determinations with or without environmental chamber capabilities. The chamber is capable of a temperature ranges from -200 F - + 480 degrees F with a RH range of 20 - 95% within a temp range of 65 - 194 F. The chamber can also be set up to run independent of the Instron. We possess all available jaws, grips, for any given material including webbing, cording, and special applications.

2. **Instron 4400R Tensile Testing Machine**

The Instron 4400R tensile testing machine has the capability to test loads up to 100,000 lbs in either tensile or compressive modes with a working displacement range of 90 inches. The system is driven with an automated interface, which includes test control and data acquisition capabilities. Applications include high strength webbings, ropes, and fixtures.

3. **MTS Servo-Hydraulic Test System**

The equipment is a servo-hydraulic driven tension and compression testing system. The system has the load capability of 500,000 lbs and is computer controlled. Custom fixtures may need to be fabricated to accommodate various test items.

G) Miscellaneous

1. **Ballistic Range**

The capability of the ballistic range evaluates the impact behavior of yarns, fabrics, and composites. The Fragment Simulating Projectile (FSP) is propelled by helium gas pressure. A pressure range is built-up to 1500psi, which is equivalent to the around 450m/sec of initial velocity of 17-grain (1.1grams) steel projectile.

2. **Digital Inkjet Design/Printing System**

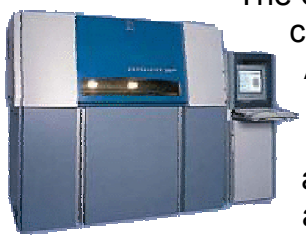
This system is the superior solution for the production of one-off samples and prototypes for co-lour communication in the design process. Utilizing 6 reactive process colors the Amber printer can print any design on any natural substrate with the large color gamut that you expect from your sampling printer. With its printing speed of up to 4.6 sqm/hour and the printing width of the industry standard

of 1.6 meters, the Amber suits perfect in design studios and/or pre-production facilities. With the industry standard windows 95/98 interface the Amber digital sampling printer connects to all common CAD systems. The printer is driven by Stork's Printer-Server software, based on the know how from Stork SW developers that know the digital textile work-flows and have loaded it with all necessary features, including ICC compatibility and must-have items as drop and repeat function and the like.

3. **Hydraulic Press**

Maximum Pressure - 350tons
Maximum Temperature - 650F
Size of Platens - 24" x 24"

4. **Rapid Prototyping System – Sinter Station 2500 Plus**



The SinterStation 2500Plus is a rapid prototyping system, which has the capability to fabricate functional prototypes directly from Computer Aided Design (CAD) data. The SinterSation uses nylon with a 6000-psi yield strength resulting in prototypes that resemble an injection-molded part in form and function. The system builds with an accuracy of .005", which can be further refined with multiple builds and scaling adjustments and has a maximum build envelope of 14.5" x 12.5" x 17.5" inches.

TESTING SERVICE AGREEMENT
BETWEEN
NATICK SOLDIER CENTER
&

_____

NAME OF TEST OR NATURE OF SERVICE: (*Brief Description)*

_____
_____
_____
_____

SPECIFIC ITEM TO BE TESTED: ***(List or explain)***

_____
_____
_____

PURPOSE: ***(Include one Sentence Purpose Statement and Reference Attached Statement of Work)***

_____
_____
_____

WHEREAS 10 U.S.C. 2539b(a)(3) gives the secretaries of the military departments authority to make available to any person or entity, at an appropriate fee, the services of any government laboratory, center, range, or other testing facility for the testing of materials, equipment, models, computer software, and other items.

WHEREAS *(Insert Company Name or Individual)*_____ (hereinafter referred to as the Purchaser) has requested, and the Natick Soldier Center (hereinafter referred to as NSC) has agreed to conduct and/or furnish, certain tests and/or test services as described above, the Purchaser, after having indicated that this test is not in direct competition with private industry, and NSC do now therefore agree to the following terms and conditions which shall govern the conduct and/or furnishing of such tests and/or test services:

a. It is understood that NSC will accept the items(s) listed above for the stated test and any information submitted for use in such test shall not be disclosed outside the Government, except that such information may be disclosed to foreign governments when tests are conducted for or on behalf of private foreign industry. Unless otherwise specified herein, the results of the stated test are confidential and may not be disclosed outside the Government without the consent of the Purchaser.

b. The test and/or test services shall be conducted and/or furnished at *(Insert Building Name & Number)* NSC to commence on a date and at a time convenient to NSC as determined by the laboratory director, who will notify the Purchaser of such scheduled date and the estimated completion date. The aforementioned beginning and estimated completion dates are to be furnished for planning purposes only, and NSC may, at its discretion, change such dates or terminate the test prior to completion with or without prior notice to the Purchaser, and the Government shall not become liable to the Purchaser as a result of or because of such changes or termination.

c. (1) In consideration of the test and/or test services to be conducted and/or furnished by NSC, the Purchaser agrees to pay NSC the cost thereof as determined by NSC, it being mutually agreed that such cost will include the amount necessary to recoup both the direct and indirect costs involved that are incurred by NSC to provide for the testing.

(2) Additionally, it is understood and agreed that the Purchaser will bear all costs for transportation, packing, crating and drayage relating to the item(s) submitted for testing, including that which NSC may, for its own convenience, perform or cause to be performed.

d. It being estimated by NSC that the cost of the test and/or testing services to be provided by NSC will not exceed the sum of $_____ which sum includes:____

- Performing the tasks as outlined in Purchaser's attached Statement of Work,

- The Purchaser will pay to NSC prior to commencement of the test and/or test services, the sum of $_____ by cashier's check, certified check, bank money order or U.S. Postal Money Order, payable to U.S. Treasury.

The Purchaser shall note on the check and in an accompanying cover letter that payment is for Testing Services Agreement. In addition, the Purchaser shall note the following information within the cover letter: (1) the project name (2) the Purchaser's name (3) the Government technical point of contact (4) the Directorate name. Payment by check shall be made to the **U.S. Treasury**, with left hand corner notation, **"for Natick Soldier Center".**

The Purchaser shall mail the payment to the following address:

U.S. Army Soldier and Biological Chemical Command
Natick Soldier Center
ATTN: Lois Casey (AMSSB-SRM-PB-B)
Kansas St.
Natick, MA 01760-5021

- It is understood and agreed that NSC will not incur costs in excess of the estimated amount without notice to the Purchaser of a revised estimated cost, and deposit with NSC by the purchaser of such additional sum as may be required to cover the additional estimated costs.

e. The Purchaser and NSC agree that:

(i) The Government shall not be liable for loss or destruction of or damage to the test item, or for any other damages, whether direct or consequential.

(ii) Upon completion or termination of the test and/or test services, and receipt by the Purchaser of notification of such completion or termination, the Purchaser will promptly remove the test item from the Government's premises.

(iii) All transfers of property or services of whatever nature made pursuant to this Agreement shall be without any express or implied warranty whatsoever, including the warranties of merchantability and fitness for a particular purpose.

f. The Purchaser agrees

(i) to hold harmless and indemnify the Government against the following insofar as they may result from the performance and/or furnishing of the test and/or test services described above:

(A) claims (including reasonable expense of litigation or settlement) by third persons (including employees of the Purchaser) for death, bodily injury (including sickness or disease) or loss of, damage to, or loss of use of property, and

(B) loss of or damage to property of the Government or property in its custody, and loss of use of such property, and

(ii) that he will, at the request of and to the satisfaction of NSC, furnish bond, U.S. Postal Money Order, certified check or other security to guarantee compliance with part (1) of this clause.

g. The Purchaser agrees not to circulate, refer to**,** or otherwise use for publicity or advertising purposes the results of the tests conducted by NSC in any manner that will bear a connotation of endorsement of a product by NSC or any other agency of the Government.

h. NSC reserves the right to limit the number and term of visits of observers and/or test participators.

Natick Soldier Center
Natick, Massachusetts 01760-5056

BY:

_____
(Project Officer Signature)

_____
(Printed Named and Title)

_____
(Date)

(Name & Address of Purchaser)

_____

_____

BY:

_____
(Signature)

_____
(Printed Named and Title)

_____
(Date)

BY:

_____
(Signature)
Testing Services Officer
Natick Soldier Center

_____
(Date)

Revised: 9May02